IN THE CLAIMS

This Listing of Claims replaces all prior Listings and versions of claims in the above-identified application.

Listing of Claims

1-66. (Cancelled)

67. (New) A fusion protein comprising a soluble protein joined without an intervening peptide linker to an immunoglobulin (Ig) domain that does not contain a variable region, wherein the soluble protein is selected from the group consisting of a growth factor, a cytokine that is not interleukin-10 (IL-10), and an active variant of said growth factor or said cytokine that is not IL-10.

68. (New) The fusion protein of Claim 67, wherein the Ig domain is selected from the group consisting of IgG-Fc, IgG-C_H and IgG-C_L.

69. (New) The fusion protein of Claim 67, wherein the soluble protein is a member of the growth hormone (GH) supergene family.

70. (New) The fusion protein of Claim 67, wherein the soluble protein is erythropoietin (EPO), and wherein the fusion protein has an EC_{50} of less than about 1000 ng/ml in an EPO-dependent *in vitro* bioassay using a cell line that proliferates in response to EPO.

71. (Withdrawn-New) The fusion protein of Claim 67, wherein the soluble protein is granulocyte-colony stimulating factor (G-CSF).

72. (Withdrawn-New) The fusion protein of claim 71, wherein the fusion protein has an EC_{50} of less than about 300 ng/ml in a G-CSF-dependent cell assay using a cell line that proliferates in response to G-CSF.

73. (Withdrawn-New) The fusion protein of claim 71, wherein serine is substituted for cysteine-17 of G-CSF.

74. (Withdrawn-New) The fusion protein of Claim 67, wherein the soluble protein is growth hormone (GH).

75. (Withdrawn-New) The fusion protein of Claim 67, wherein the soluble

protein is selected from the group consisting of granulocyte-macrophage colony stimulating factor (GM-CSF), interleukin-11 (IL-11), thrombopoietin (TPO), stem cell factor (SCF) and flt3 ligand.

76. (Withdrawn-New) The fusion protein of Claim 67, wherein the soluble protein is selected from the group consisting of alpha interferon, beta interferon, gamma interferon, omega interferon and tau interferon.

77. (New) A pharmaceutical composition comprising the fusion protein of Claim 67 in a pharmaceutically acceptable carrier.

78. (New) A composition comprising the fusion protein of Claim 67, wherein said fusion protein is dimeric and wherein said composition is essentially free of monomeric fusion protein.

79. (New) The composition of Claim 78, wherein the soluble protein is selected from the group consisting of G-CSF, EPO and interleukin-11.

80. (New) A nucleic acid encoding the fusion protein of Claim 67.

81. (New) A host cell transfected or transformed with the nucleic acid of claim 80, enabling the host cell to express the fusion protein.

82. (New) The host cell of claim 81, wherein the host cell is a eukaryotic cell.

83. (New) The host cell of claim 82, wherein the eukaryotic cell is a mammalian cell.

84. (New) A method of producing a fusion protein of Claim 67, comprising:

a) transfecting or transforming a host cell with an expression vector comprising at least one nucleic acid encoding the fusion protein of Claim 67;

b) culturing the host cell under conditions effective to express said fusion protein; and

c) harvesting the fusion protein expressed by the host cell.

85. (New) A method of purifying the fusion protein of Claim 67, comprising:

a) obtaining a composition comprising the fusion protein; and

b) isolating the fusion protein from contaminants by column

chromatography.

86. (New) The method of claim 85, wherein the fusion protein is isolated from contaminants by size-exclusion chromatography.

87. (Withdrawn-New) A method of treating a condition treatable with a member of the Growth Hormone (GH) supergene family, comprising administering an effective amount of the fusion protein of Claim 67 to a patient in need thereof.

88. (Withdrawn-New) The method of claim 87, wherein the fusion protein is a G-CSF-Immunoglobulin fusion protein and wherein the condition is a deficiency of blood neutrophils.

89. (Withdrawn-New) The method of claim 87, wherein the fusion protein is an EPO-Immunoglobulin fusion protein and wherein the condition is a deficient hematocrit.

90. (New) A fusion protein comprising a soluble protein joined at its carboxy-terminus by a peptide linker that consists of a mixture of between 2 and 7 amino acid residues selected from the group consisting of: glycine and serine, to the amino terminus of an immunoglobulin domain that does not contain a variable region, wherein the soluble protein is selected from the group consisting of a growth factor, a cytokine that is not interleukin-10 (IL-10), a cytokine that is not an interferon, and an active variant of any of said growth factor, cytokine that is not IL-10, or cytokine that is not an interferon.

91. (New) The fusion protein of Claim 90, wherein the Ig domain is selected from the group consisting of IgG-Fc, IgG-C_H and IgG-C_L.

92. (New) The fusion protein of Claim 90, wherein the peptide linker consists of a mixture of 2, 4 or 7 amino acid residues selected from the group consisting of glycine and serine.

93. (New) The fusion protein of claim 90, wherein the peptide linker is SerGly.

94. (New) The fusion protein of claim 90, wherein the peptide linker is SerGlyGlySer (SEQ ID NO:1) or $Ser(GlyGlySer)_2$ (SEQ ID NO:3).

95. (New) The fusion protein of Claim 90, wherein the soluble protein is a member of the growth hormone (GH) supergene family.

96. (New) The fusion protein of Claim 90, wherein the soluble protein is erythropoietin (EPO), and wherein the fusion protein has an EC_{50} of less than about 1000 ng/ml in an EPO-dependent *in vitro* bioassay using a cell line that proliferates in response to EPO.

97. (Withdrawn-New) The fusion protein of Claim 90, wherein the soluble protein is granulocyte-colony stimulating factor (G-CSF).

98. (Withdrawn-New) The fusion protein of Claim 96, wherein the fusion protein has an EC_{50} of less than about 300 ng/ml in a G-CSF-dependent cell assay using a cell line that proliferates in response to G-CSF.

99. (Withdrawn-New) The fusion protein of Claim 96, wherein serine is substituted for cysteine-17 of G-CSF.

100. (Withdrawn-New) The fusion protein of Claim 90, wherein the soluble protein is growth hormone (GH).

101. (Withdrawn-New) The fusion protein of Claim 90, wherein the soluble protein is selected from the group consisting of granulocyte-macrophage colony stimulating factor (GM-CSF), interleukin-11 (IL-11), thrombopoietin (TPO), stem cell factor (SCF) and flt3 ligand.

102. (New) A composition comprising the fusion protein of Claim 90, wherein said fusion protein is dimeric and wherein said composition is essentially free of monomeric fusion protein.

103. (New) The composition of claim 102, wherein the soluble protein is selected from the group consisting of G-CSF, EPO and interleukin-11.

104. (New) A method of producing a fusion protein of Claim 90, comprising:

a) transfecting or transforming a host cell with an expression vector comprising at least one nucleic acid encoding the fusion protein of Claim 90;

b) culturing the host cell under conditions effective to express the fusion protein; and

c) harvesting the fusion protein expressed by the host cell.

105. (New) The method of Claim 104, further comprising purifying dimeric fusion protein from monomeric fusion protein.

106. (New) A homomultimeric fusion protein comprising two or more copies of a member of the Growth Hormone (GH) supergene family joined without an intervening peptide linker.

107. (Withdrawn-New) The homomultimeric fusion protein of Claim 106, wherein the member of the GH supergene family is granulocyte-colony stimulating factor (G-CSF).

108. (Withdrawn-New) The homomultimeric fusion protein of claim 107, wherein the homomultimeric fusion protein is a dimeric G-CSF fusion protein.

109. (New) The homomultimeric fusion protein of Claim 106, wherein the member of the GH supergene family is EPO.

110. (New) The homomultimeric fusion protein of Claim 109, wherein the multimeric fusion protein is a dimeric EPO fusion protein.

111. (Withdrawn-New) The homomultimeric fusion protein of Claim 106, wherein the member of the GH supergene family is selected from the group consisting of: growth hormone, alpha interferon, beta interferon, gamma interferon, GM-CSF, IL-11, TPO, SCF, and Flt3 ligand.

112. (New) A homomultimeric fusion protein, comprising two or more copies of erythropoietin joined by at least one peptide linker that consists of a mixture of between 2 and 7 amino acid residues selected from the group consisting of: glycine and serine.

113. (New) The homomultimeric fusion protein of Claim 112, wherein the multimeric fusion protein is a dimeric EPO fusion protein.

114. (New) The homomultimeric fusion protein of Claim 112, wherein the peptide linker consists of a mixture of 2, 4 or 7 amino acid residues selected from the group consisting of glycine and serine.

115. (New) The fusion protein of Claim 112, wherein the peptide linker is SerGly.

116. (New) A homomultimeric fusion protein comprising two or more copies of a member of the Growth Hormone (GH) supergene family joined by at least one peptide

linker that consists of a mixture of between 2 and 7 amino acid residues selected from the group consisting of: glycine and serine, wherein the member of the GH supergene family is selected from the group consisting of: erythropoietin, growth hormone, prolactin, placental lactogen, thrombopoietin (TPO), interleukin(IL)-2, interleukin-3, interleukin-4, interleukin-5, interleukin-6, interleukin-7, interleukin-9, interleukin-10, interleukin-11, interleukin-12 (p35 subunit), interleukin-13, interleukin-15, oncostatin M, ciliary neurotrophic factor, leukemia inhibitory factor, alpha interferon, beta interferon, gamma interferon, omega interferon, tau interferon, granulocyte-colony stimulating factor (G-CSF), granulocyte-macrophage colony stimulating factor (GM-CSF), cardiotrophin-1, macrophage colony stimulating factor, Stem Cell Factor and flt-3 ligand.

117. (New) The homomultimeric fusion protein of Claim 116, wherein the peptide linker consists of a mixture of 2, 4 or 7 amino acid residues selected from the group consisting of: glycine and serine.

118. (New) The fusion protein of Claim 116, wherein the peptide linker is SerGly.

119. (Withdrawn-New) The homomultimeric fusion protein of Claim 116, wherein the member of the GH supergene family is granulocyte-colony stimulating factor (G-CSF).

120. (Withdrawn-New) The homomultimeric fusion protein of Claim 119, wherein the homomultimeric fusion protein is a dimeric G-CSF fusion protein.

121. (Withdrawn-New) The homomultimeric fusion protein of Claim 116, wherein the member of the GH supergene family is selected from the group consisting of: growth hormone, alpha interferon, beta interferon, gamma interferon, GM-CSF, IL-11, TPO, SCF, and Flt3 ligand.

122. (New) A multimeric fusion protein comprising two or more different members of the Growth Hormone supergene family joined by at least one peptide linker that consists of a mixture of between 2 and 7 amino acid residues selected from the group consisting of: glycine and serine, wherein the members of the Growth Hormone supergene family are selected from the group consisting of growth hormone, prolactin, placental lactogen, erythropoietin (EPO), thrombopoietin (TPO), interleukin(IL)-2, interleukin-4,

interleukin-5, interleukin-6, interleukin-7, interleukin-9, interleukin-10, interleukin-11, interleukin-12 (p35 subunit), interleukin-13, interleukin-15, oncostatin M, ciliary neurotrophic factor, leukemia inhibitory factor, alpha interferon, beta interferon, gamma interferon, omega interferon, tau interferon, granulocyte-colony stimulating factor (G-CSF), cardiotrophin-1, macrophage colony stimulating factor, Stem Cell Factor and flt-3 ligand.

123. (New) The fusion protein of Claim 122, wherein the peptide linker consists of 2, 4 or 7 amino acid residues selected from the group consisting of glycine and serine.

124. (New) The fusion protein of Claim 122, wherein the peptide linker is SerGly.